INITIATING THROMBOLYTIC THERAPY FOR ACUTE MYOCARDIAL INFARCTION: WHOSE JOB IS IT ANYWAY?

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Abstract • Résumé

Although thrombolytic therapy has clearly become the standard of care for acute myocardial infarction (AMI), its delivery in Canada continues to be extremely variable. Significant unnecessary delays in the initiation of this treatment still occur in many hospitals and constitute the most common avoidable cause of death in patients with AMI. The authors agree with the statement by representatives of the member organizations of the Emergency Cardiac Care Coalition (see pages 483 to 487 of this issue) that emergency service providers must get patients to hospital sooner and that all eligible patients should receive thrombolytic therapy within 30 minutes of their arrival at hospital. This objective requires that thrombolytic therapy be initiated by emergency physicians and be supported by well-established guidelines for its use.

Même s'il est clair que la thérapie thrombolytique est devenue le traitement normal contre les infarctus aigus du myocarde (IAM), son administration au Canada demeure extrêmement variable. Il y a encore, dans de nombreux hôpitaux, d'importants retards inutiles dans l'administration de ce traitement. Ces retards constituent la cause évitable la plus fréquente de décès chez les patients victimes d'IAM. Les auteurs sont d'accord avec les représentants des organisations membres de la Coalition des soins cardiaques d'urgence (voir pages 483 à 487 du présent numéro), qui affirment que les fournisseurs de services d'urgence doivent amener plus rapidement les patients à l'hôpital et que tous les patients admissibles devraient recevoir une thérapie thrombolytique dans les 30 minutes suivant leur arrivée à l'hôpital. Pour atteindre cet objectif, il faut que la thérapie thrombolytique soit amorcée par les médecins urgentistes et soit appuyée par des guides de pratique bien établis.

In this issue (see pages 483 to 487) representatives of the member organizations of the Emergency Cardiac Care Coalition make important and timely recommendations for the early administration of thrombolytic therapy for acute myocardial infarction (AMI). These recommendations, which relate to the care of patients with AMI before they reach hospital as well as after admission, deserve enthusiastic endorsement and should be implemented nationally. The authors address the continuing problem of unnecessary delays that prohibit the timely delivery of thrombolytic therapy to eligible patients. As various studies have demonstrated, reducing these delays is imperative. In the Myocardial Infarction Triage and Intervention Trial, for example, the rate of death among patients with AMI who were treated within 70 minutes after the onset of symptoms was 1.3%, as compared with 8.7% among patients who were treated later.[1]

Delays in treatment that occur before the patient reaches hospital can be considerable. Between 29% and 42% of patients wait more than 4 hours before seeking medical help,[2–4] and numerous factors contribute to patients' delays in responding to symptoms.[3,5] Aggressive and sustained educational initiatives by physicians and community organizations are needed to improve public awareness of the symptoms of myocardial ischemia and the advantages of rapid treatment.

Although many patients come to hospital on their own, many others access community emergency medical services. Unfortunately, transport by ambulance is not without its own delays: a study conducted in eight American cities showed that an average of 46 minutes

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passed between the time patients dialled 911 and their arrival at hospital.[6]

The recommendations relating to care in hospital address a frustrating reality: unnecessary delays in treatment by emergency physicians, nurses and medical consultants are now the most common avoidable cause of death in patients with AMI. As part of the Thrombolysis in Myocardial Infarction II trial, Sharkey and associates[7] investigated the delays that preceded treatment of 236 consecutive patients with intravenous tissue plasminogen activator. Delays in hospital accounted for 59% of the time that elapsed from the onset of ischemic symptoms to the initiation of thrombolytic therapy. This finding suggests that reducing in-hospital delays would be the single most important factor in shortening the time to the initiation of thrombolytic therapy and achieving coronary artery reperfusion.

Even though thrombolytic therapy has clearly become the standard of care in AMI, its delivery in Canada continues to be extremely variable. A survey of metropolitan Toronto hospitals carried out in 1994 revealed that thrombolytic therapy was being initiated in the emergency department 100% of the time in only 12 of 21 hospitals (E.L. and Dr. Bjug Borgundvaag, Mount Sinai Hospital, Toronto: unpublished data, 1994). In another six hospitals, thrombolytic therapy was sometimes initiated in the emergency department, and in three hospitals it was never initiated in the emergency department. The survey also revealed that emergency physicians initiated thromobolytic therapy themselves in only 12 hospitals, and did so on average only 30% of the time. In nine hospitals the thrombolytic therapy given was never initiated by the emergency physician. Instead, the decision was made by on-call internists or consultant house staff.

These data mirror practice patterns in the rest of the country. We conducted a pre-course survey of thrombolytic therapy practice patterns among registrants for a 1-day workshop on the recognition and treatment of AMI, held in 12 cities on behalf of the Canadian Association of Emergency Physicians. Of 289 emergency physicians surveyed only 68% worked in hospitals where thrombolytic therapy was always initiated in the emergency department, and 14% worked in hospitals where thrombolytic therapy was never initiated in the emergency department (unpublished data). This is regrettable. Numerous studies have demonstrated that delaying thrombolytic therapy until patients get to an intensive care or coronary care unit adds between 50 to 60 minutes to the time before therapy is initiated.[8,9] Furthermore, only 25% of respondents said they initiated thrombolytic therapy without obtaining a consultation with a cardiologist or internist. Routine consultation of a second physician necessarily adds delays.

Clearly, significant and avoidable delays in the provision of thrombolytic therapy continue to occur in many Canadian hospitals. The goal of treatment for AMI in emergency departments should be for all eligible patients to receive thrombolytic therapy within 30 minutes of their arrival. Therefore, thrombolytic therapy must be initiated in emergency departments, and it should be instituted by the first physician capable of making the diagnosis and of determining the patient's eligibility for this treatment. In the overwhelming majority of cases, this could and should be the emergency physician rather than the attending internist or on-call cardiologist. Established guidelines for selecting the best agent to use in different clinical cases, protocols for preparing and administering medications, and ready access to thrombolytic agents in the emergency department are a few of the other essential components of a system that will allow for faster initiation of therapy.

We urge emergency physicians to accept responsibility for the use of thrombolytic agents in AMI and to become familiar with all aspects of their use: indications, contraindications, available preparations, dosages and the management of complications. We urge internists and cardiologists who assume responsibility for the subsequent care of patients with AMI to cooperate in establishing policies and protocols that will facilitate the rapid and secure administration of thrombolytic agents in the emergency department. Old habits and "turf wars" serve only to detract from optimal patient care.

Great strides have been made in the past 10 years in the treatment of AMI, specifically with respect to thrombolytic and adjunctive therapy. The goal for emergency service providers and hospital personnel is to get patients with apparent ischemic pain to hospital quicker, to identify patients who are eligible for thrombolytic therapy sooner and to start thrombolytic therapy earlier in the emergency department. These measures are essential if we are to reduce morbidity and mortality further among patients with AMI.

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Conferences continued from page 479

Mar. 18–19, 1996: Therapeutic Conversation as Collaborative Inquiry (sponsored by the Social Work Discipline, Rehabilitation Centre, Royal Ottawa Health Care Group)
Ottawa
Presenter: Michael White, Dulwich Centre, Adelaide, Australia
Carolyn Cashman and Associates Inc., 37 Four Seasons Dr., Nepean ON K2E 7P9; tel 613 228-2883, fax 613 228-0825

Le 20 mars 1996 : Téléconférence éducative nationale par satellite — Les infections nosocomiales et la résistance aux antibiotiques (présentée par le Réseau SatSanté inc. et parrainée par le Laboratoire de lutte contre la maladie de Santé Canada, dans le cadre de la série Visioconférences)
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Pour renseignements, communiquer avec le service de l'éducation ou de l'audiovisuel d'un hôpital de votre région, ou avec SatSanté (800 263-9509)

Mar. 20, 1996: National Educational Satellite Conference — Nosocomial Infections and Antibiotic Resistance (presented by HealthSat Network Inc. and sponsored by the Laboratory Centre for Disease Control, Health Canada, as part of its Satellite Seminar Series)
Presented at 61 hospitals across Canada via satellite
Contact the education or audiovisual department of your nearest hospital or HealthSat (800 263-9509) for more information.

Mar. 21–22, 1996: 6th Annual Rotman Research Institute Conference — Functional Neuroimaging: Advances and Applications
Toronto
Education Department, Baycrest Centre for Geriatric Care, 3560 Bathurst St., Toronto ON M6A 2E1; tel 416 785-2500, ext 2365

Mar. 22–24, 1996: Human Genome Meeting '96
Heidelberg, Germany
HGM '96 Secretariat, HUGO Europe, 1 Park Sq. W, London NW1 4LJ, England; tel 44 171 935-8085; fax 44 171 935-8341

Mar. 24–27, 1996: The Best Approach
Whistler, BC
Melinda Arnold, Group Health Cooperative, Provider Education and Guidelines CEB-1, 201–16th Ave. E, Seattle WA 98112; tel 206 326-3934, fax 206 326-3774; marnold@accgw.ghc.org

Mar. 26–30, 1996: Nutrition Action — Food for an Aging Population (cosponsored by the National Institute of Nutrition)
Ottawa
Kathy Unsworth, director, National Meals Network, Canadian Association for Community Care, 701–45 Rideau St., Ottawa ON K1N 5W8; tel 613 241-7510, fax 613 241-5923

Mar. 27–29, 1996: Alternative Medicine: Implications for Clinical Practice Conference
Boston
Study credits available.
Professional Meeting Planners, 201–5 Central Sq., Stoneham MA 02180; tel 800 378-6857 or 617 279-9887, fax 617 279-9875

Mar. 28, 1996: Channelling Anger and Aggression — Cognitive and Behavioural Strategies
London, Ont.
Child and Parent Resource Institute, 600 Sanatorium Rd., London ON N6H 3W7; tel 519 471-2540, ext. 2074; fax 519 641-1922

Mar. 28–29, 1996: IBC's 5th Annual Conference on Nitric Oxide — Moving Toward the Clinic
Philadelphia
International Business Communications USA Conferences Inc., 225 Turnpike Rd., Southborough MA 01772-1749; tel 508 481-6400, fax 508 481-7911

Mar. 31–Apr. 3, 1996: US Centers for Disease Control and Prevention 1996 Diabetes Translation Conference — Health Care in Transition: Diabetes as a Model for Public Health
Washington
Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, Atlanta GA 30333

Apr. 14, 1996: 8th Annual Symposium on Treatment of Headaches and Facial Pain
New York
Dr. Alexander Mauskop, director, New York Headache Center, 301 E 66 St., New York NY 10021; tel 212 794-3550

Apr. 16–18, 1996: Community and Hospital Infection Control Association (Canada) National Education Conference — Pacific Transformation: Ideas into Action
Vancouver
Mrs. Gerry Hansen, conference planner, CHICA-Canada, PO Box 46125, RPO Westdale, Winnipeg MB R3R 3S3; tel 204 897-5990, fax 204 895-9595

Apr. 18–19, 1996: 2nd Annual Conference: Therapeutic Camps for Children/Adolescents (sponsored by the Children's Outpatient Department and Recreation Discipline, Royal Ottawa Hospital)
Ottawa
Carolyn Cashman and Associates Inc., 37 Four Seasons Dr., Nepean ON K2E 7P9; tel 613 228-2883, fax 613 228-0825

Apr. 19, 1996: Sexual Victimization of People with Developmental Disabilities
London, Ont.
Child and Parent Resource Institute, 600 Sanatorium Rd., London ON N6H 3W7; tel 519 471-2540, ext. 2074; fax 519 641-1922

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